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21 April 1970

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MEMORANDUM FOR: Deputy Director for Intelligence

SUBJECT: Surface-to-Surface Missile Site Identification in China

1. This memorandum summarizes the problems NPIC encountered in finding the Wuchai surface-to-surface missile site in China, and it outlines the steps we are taking to improve our capabilities to detect such activities early in their development.

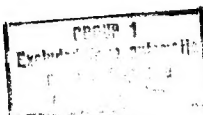
2. The Wuchai site is small in size, essentially a concrete pad 40 meters (131 feet) on a side. Its signature is undistinguished in that the concrete pad and three vehicle revetments are the only major features by which it can be identified on imagery. In the nearby support areas there are no known missile-related features. No equipment or unique facilities such as checkout equipment have been identified which would have been useful in identifying the facility.

3. No information from other sources suggested that the area of Wuchai was a candidate for missile launch sites. No search requirements caused us to focus attention on this among other areas. The Wuchai site is located some 35 miles from the nearest rail line and is off a dirt road. The road is in good condition, but is similar to hundreds of thousands of miles of road in China. Finally, the site itself is easily confused with many kinds of activities in China. The most common one is that of the rice harvesting pads in the countryside where rice is separated from the straw and bagged. These pads are often rectangular in shape and on photography are similar in appearance to the Wuchai site. See Attachment 1 for examples of these pads.

4. China includes over 3.7 million square nautical miles of terrain. In terms of our manpower resources, this has amounted to approximately 250,000 square miles of countryside per available photo interpreter. Also, because of the terrain and the nature of the Chinese urban and rural development, there is a mesmerizing monotony which develops during the scan of imagery covering China.

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5. Attached is a copy of a contact print from the recent mission on which the Muchai site was found (Attachment II). Examine the print and then note the site area which has been circled on the reverse side of the frame. Next review the 7X enlargement of the site area (Attachment III). This magnification equates to the minimum magnification at which a photo interpreter can scan [] imagery using the [] Zoom 70 or 240 scope. Again the site has been circled on the back of the print. Finally, review the 30X imagery of the Muchai site (Attachment IV). Again the site has been circled on the back for location.

6. In retrospect it may appear that this is an easily identifiable site on [] and on at least two of the 11 previous coverages of the site. But, in fact, there was a considerable identification problem within NPIC even after the site was noted as suspect. The site was first located at 0955 hours on 27 March 1970 by [] of the IEG Eastern Geographic Division, the PI Division responsible for the China scan. It was after 3:30 on that afternoon before PI's of the IEG Missiles and Space Division who specialize in missile identification were convinced that this was in fact a missile site.

7. We conclude that there were four fundamental reasons why the Muchai site was not identified on the photography acquired prior to March 1970:

a. Chinese site selection and design departed radically from known U.S. and Soviet as well as anticipated Chinese practices. The consensus of intelligence analysts concerned with missile deployment in China had been that deployment was most likely to occur in close proximity to a rail line. In fact, the Chinese constructed a pad some 35 nm from the nearest rail line some two years before starting construction of a rail spur to the site area.

b. Within IEG the mission scan has received the lowest priority for resources among the various tasks in mission exploitation. Due to the nature of the requirements levied on NPIC, emphasis has been placed on reporting each COMINT target no matter how recently it has been seen, how completely the requirement has been answered, or how static the target may be. Time pressures to complete the scan after the COMINT targets have been read out and before the next mission arrives have been causing the available photo interpreters to take shortcuts. These have included:

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(1) Scanning at too low a magnification in order to cover larger areas of the film faster. Some significant activity can easily be missed at low magnifications, particularly by personnel who are not experts in the substantive category involved.

(2) Scanning photography only from the forward or only from the aft camera, even though both are placed on the light table. This becomes dangerous when scattered clouds occur.

c. Some of the photo interpreters performing the mission scan had less than adequate knowledge of Chinese missile systems. The PIs who attend the Advanced Senior Interpretation Course at Omaha was one) acquire there an adequate knowledge of Soviet missile systems. Beyond this, an individual PI has been left much to his own devices in learning what to look for.

d. Morale in the Eastern Geographic Division has been low. A number of factors have contributed to this:

(1) The monotony of mission scan and the limited opportunity for recognition has caused morale problems among PIs assigned to this task.

(2) The PI assigned to general scanning work has had little to show or identify with in the way of resulting reports. China has been divided into three large areas and responsibility for the mission scan of these areas has been divided among 14 interpreters in three search sections. Within each of the three large areas there has been no further breakdown into segments of responsibility. Responsibility for several specific problems -- SAM search, SWARFs, Unidentified Installations and direct support projects -- had been assigned to a fourth Special Studies section. Few detailed studies were conducted in the three search sections.

(3) The necessity of having an "acting" division chief for a 9-month period during which DIA was resolving the status of the "official" chief, resulted in uncertain leadership.

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(4) PIs feel that their present equipment is inadequate and poorly maintained. Purchase of new light tables, although badly needed, has been deferred by budgetary constraints pending development of the multi-purpose 1540 light table necessary for handling [] film. Routine preventive maintenance involves cleaning and aligning the optical elements of the light table microscope system but does not include rectifying mechanical imperfections.

8. We are taking the following steps to correct these weaknesses.

a. Reorganize the China portion of the China-North Korean branch into three sections, each assigned specific military regions and provinces (see Attachment V). The Special Studies section will be dissolved. Within each section each PI will be assigned full responsibility for a specific province and, to provide flexibility for balancing workloads and overlap for leave, training, etc., secondary responsibility for an adjacent province.

b. Immediately increase the number of PIs assigned to China to the level planned for FY-71. This, together with dissolution of the Special Studies section will raise the number of PIs available for scan from 14 to 31. As indicated in a. above, each will be assigned specific responsibility for a single province.

c. To improve motivation we shall institute a series of geographic area studies to provide a vehicle for reporting and cataloging our knowledge of each province as derived from photography. In addition, the PIs will prepare all detailed reports concerning their areas, except for the 200 COMREX targets assigned to Missiles and Space Division (Missile R&D, production and deployment) and Scientific Division (nuclear, strategic industry, CW-BR and electronics). The latter reporting will be coordinated with the appropriate geographic interpreters. Appropriate recognition of deserving efforts will be given by judicious use of QSI's and other awards.

d. A permanent division chief will be appointed and management of the branch and sections strengthened.

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e. Training will be intensified. All junior PI's will be scheduled for the Offutt PI course as soon as possible. In-house seminars are being established to insure that each PI is as fully knowledgeable of the full range of activities within his province as possible. The China PI's will be among the first to be given a generalist training package being developed for us by the [redacted]. Additional emphasis will be given to on-site training trips for these interpreters.

f. The PI will be expected to review continually the intelligence value of targets within his area and to recommend addition or deletion of COMIREX targets or modification of requirements so as to enhance the relevance and value of his work. A thorough review of all COMIREX targets in China against criteria for inclusion on the COMIREX list has not been performed since the inception of COMIREX. The number of COMIREX targets in China has grown from 850 in 1968 to over 1850 at the present time. A purging and updating of the list is in order and should result in a significant reduction in total numbers. The time which has been taken to report on marginal targets could and should be applied to the scan operations.

g. New PI equipment will be provided the Eastern Geographic Division as quickly as it becomes available. In addition, we are pressing on with the development of new PI equipment, such as a Scan and Search Station, which may enhance the interpreters' surveillance capability. Even if successfully developed, however, we may be constrained in the procurement of meaningful quantities of this equipment by space and budgetary limitations.

9. I shall monitor the execution of these actions. The early discovery and identification of one small installation such as the Wuchai launch pad is difficult to achieve. I am convinced, however, that these actions together [redacted] will improve the quality of our surveillance of Chinese real estate.

ARTHUR C. LUNDAIL
Director

National Photographic Interpretation Center

Attachments:
a/s

Distribution:

Copy 1 & 2 - DDI (attachments Copy 1 only)

3 - Approved

4 & 5 - NPTC/ONPD

CHINA - NORTH KOREA BRANCH - IEG
ASSIGNMENT OF CHINESE MILITARY REGIONS AND PROVINCES

A. Northeast China Section (11 PI)

(1) Mukden Military Region

- (a) Heilungkiang Province
- (b) Kirin Province
- (c) Liaoning Province
- (d) Inner Mongolia AR

(2) Peiping/Tsinan Military Regions

- (a) Hopeh Province (includes Peiping Muni)
- (b) Shanshi Province
- (c) Shantung Province

B. Southeast China Section (12 PI)

(1) Wuhan Military Region

- (a) Honan Province
- (b) Hupeh Province

(2) Nanching Military Region

- (a) Kiangsu Province
- (b) Anhwei Province
- (c) Chekiang Province

(3) Fuchou Military Region

- (a) Kiangsi Province
- (b) Fukien Province

(4) Kuangchou Military Region

- (a) Hunan Province
- (b) Kwangtung Province
- (c) Kwangsi Chuang Autonomous Region

C. Western China Section (11 PI)

(1) Lanchow Military Region

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- (a) Shensi Province
 - (b) Ningsia Hui Ar
 - (c) Kansu Province
 - (d) Tsinghai Province
- (2) Chengtu/Kunming Mil Regions
- (a) Szechwan Province
 - (b) Yunnan Province
 - (c) Kwuchow Province
- (3) Singiang AR
- (4) Tibet
- D. North Korea Section (6 PI)

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CHINA SSM SEARCH

CONCLUSIONS

1. No surface-to-surface missile (SSM) sites other than the known sites at the Shuangchengtzu Missile Test Center and near Wuchai have been identified during the special search of China. However, two areas of suspect SSM activity were uncovered by the search--one in Manchuria near the Korean border and one in Sinkiang near Wushatala Airfield. A Photographic Interpretation Report on each area containing a brief description and a photograph is attached. These areas have been photographed on [redacted] and are being evaluated on the basis of this high-resolution photography.

2. The search disclosed areas of inadequate photography of China from which to make a determination of the presence of SSM sites. These areas and the dates when other areas of China can be negated for SSMs are depicted on the attached graphic.

3. In addition to the two suspect areas, the search disclosed additional unidentified facilities or activities which are not believed to be associated with SSM activity. These areas have been catalogued, and high-resolution photography of each has been requested. They will be evaluated and the results published as part of the NPIC unidentified facility program. A photograph and a brief description of each are attached.

METHODOLOGY

The search was conducted between 2 and 24 April 1970 by personnel from the Defense Intelligence Agency (DIAAP-9), the Imagery Analysis Service (IAS), and the National Photographic Interpretation Center (NPIC). NPIC managed the search and provided working space and support. The specific objective was the identification of any evidence of SSM activity in China, with primary emphasis on an exhaustive search for deployed missiles, missile-related activity, or new missile pads.

For search and reporting purposes, the 58 WAC areas into which China is divided were assigned priorities in the order of those most likely for SSM deployment. Each of these WACs was systematically searched by one of the 33 photographic interpreters assigned to the project, starting with the most recent [redacted] satellite photography available [redacted]

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[redacted] In each WAC the interpreter worked back through the available coverage to the most recent clear photography of sufficient interpretability to reveal possible SSM activity. Each interpreter recorded on his WAC sheet the area negated on a given mission. This information was later transferred by a graphical analyst from these work sheets to the final graphic. As shown on this graphic, the interpreter was sometimes able to accomplish the negation on [redacted] satellite photography. In much of the country, however, it was necessary to go back to earlier photography in order to establish a negation date. No photography earlier than [redacted]-the negation date for the Wuchai site--was used in this search. It should be noted that the coverage depicted on this graphic does not necessarily agree with similar information provided by the Army Map Service, since NPIC has adopted more stringent criteria of interpretability.

As areas of unidentified activity were disclosed by the search, an evaluation of their possible SSM association was made by senior Chinese missile interpreters. Those activities deemed to have suspect SSM relationships were immediately relayed to the Intelligence Requirements Collection Staff for programming for high-resolution coverage on [redacted]. [redacted] The remaining areas were set aside for the duration of the search and are being investigated. High-resolution coverage of these areas has been requested for [redacted]. During the search two suspect SSM-related facilities were identified, and ten other unidentified facilities or activities were found.

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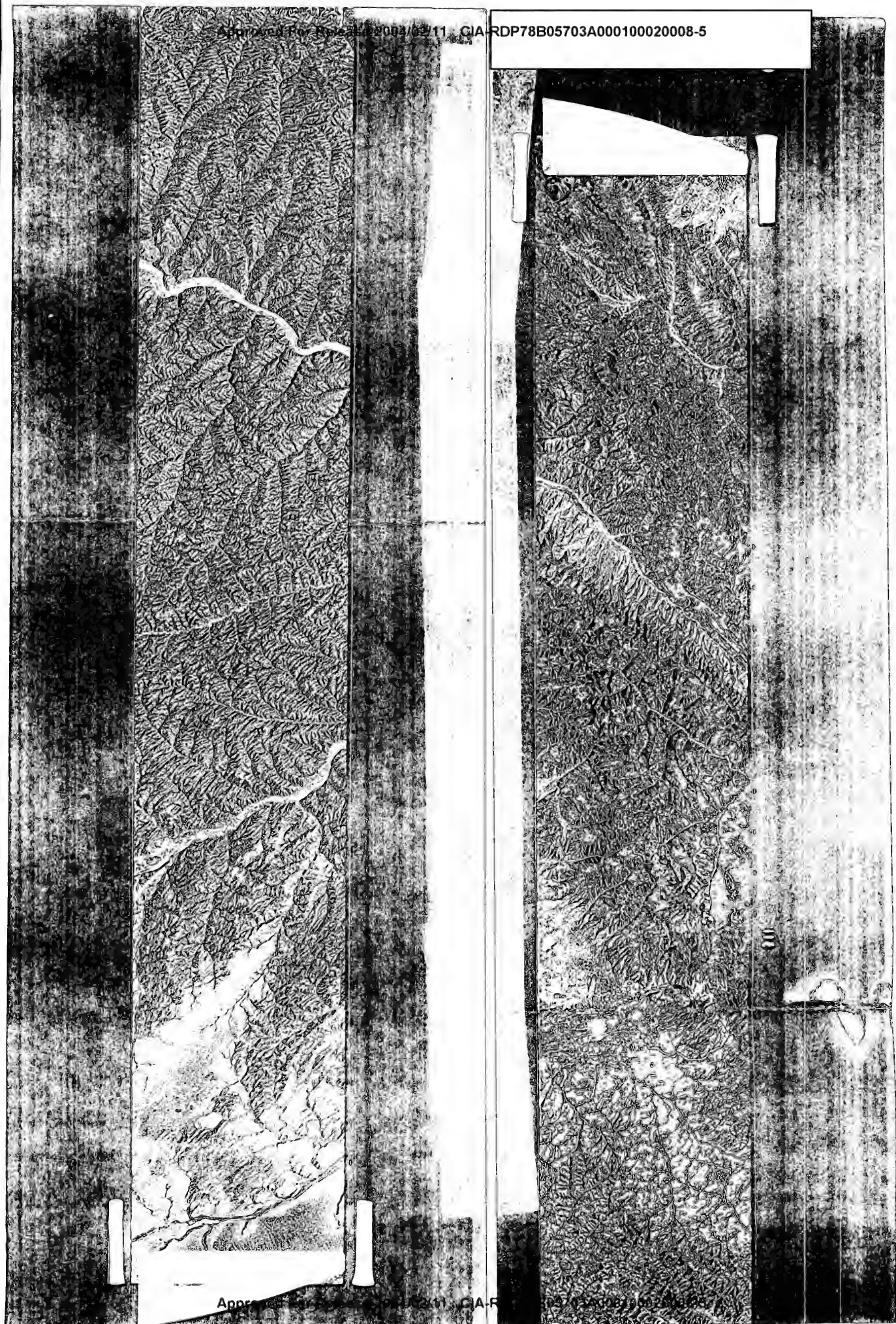
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WUCHAI SITE (CONTACT PRINT)

CONTACT PRINT)

Attachment II

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Attachment III

WUCHAI SITE (7X)

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Attachment IV

WUCHAI SITE (30X)

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Attachment I

RICE HARVESTING PADS



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12 June 70

Ch, IEG - Ch, PSE

- Re BIZR on Lin-Ching
SSM site:

Well and quickly done.



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